

U.S. Patent Application No. 10/074,333
Amendment dated December 23, 2003
Reply to Office Action dated September 23, 2003

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claim 1 (currently amended): A cross-linkable fluoropolymer dispersion comprising:

a) a polymer product of at least one polymerizable acrylic and/or vinyl containing monomer;

b) in the presence of an aqueous dispersion of at least one fluoropolymer, wherein at least one sterically hindered silane containing group is present in a), ~~b)~~, or both a) and b).

Claim 2 (currently amended): A cross-linkable fluoropolymer blend comprising:

a) at least one acrylic resin or vinyl resin, or both,

b) at least one thermoplastic fluoropolymer, wherein a) and b) are different, wherein at least one sterically hindered silane or silane group is polymerized in the backbone of a), ~~b)~~, or both a) and b).

Claim 3 (original): The polymer blend of claim 2, wherein said at least one thermoplastic fluoropolymer is uniformly distributed throughout said cross-linkable fluoropolymer blend.

Claim 4 (previously presented): A cross-linkable fluoropolymer blend comprising:

a) at least one polymer comprising acrylic units, vinyl units, or both, and at least one sterically hindered silane or silane containing group; and

b) at least one thermoplastic fluoropolymer, wherein a) and b) are different.

Claim 5 (previously presented): A cross-linkable fluoropolymer dispersion comprising

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a polymer product resulting from polymerizing at least one polymerizable acrylic and/or vinyl containing monomer and at least one sterically hindered silane monomer in the presence of an aqueous dispersion of at least one fluoropolymer.

Claim 6 (original): The polymer blend of claim 2, wherein said at least one thermoplastic fluoropolymer is a copolymer.

Claim 7 (original): The polymer blend of claim 2, wherein said fluoropolymer comprises poly(vinylidene fluoride).

Claim 8 (currently amended): ~~The polymer blend of claim 2~~ A cross-linkable fluoropolymer blend comprising:

a) at least one acrylic resin or vinyl resin, or both,

b) at least one thermoplastic fluoropolymer, wherein a) and b) are different, wherein at least one sterically hindered silane or silane group is polymerized in the backbone of a), b), or both, wherein said acrylic resin or vinyl resin is fluorinated.

Claim 9 (original): The polymer blend of claim 2, wherein said acrylic resin or vinyl resin is a copolymer.

Claim 10 (original): The polymer blend of claim 2, wherein said fluoropolymer is a homopolymer.

Claim 11 (original): The polymer blend of claim 2, wherein said fluoropolymer is a mixture of a fluoropolymer with a non-fluoropolymer.

Claim 12 (original): The polymer blend of claim 2, wherein said polymer product includes a functional monomer.

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Claim 13 (cancelled)

Claim 14 (previously presented): The polymer blend of claim 2, wherein said sterically hindered silane monomer is a silane monomer containing at least one vinyl group, a silane group present as a chain transfer agent or initiator, an organosilane group having a functional group which can react with a functional side group on an existing polymer chain, or combinations thereof.

Claim 15 (currently amended): A cross-linkable fluoropolymer blend comprising:

- a) at least one polymer comprising acrylic units, vinyl units, or both and optionally at least one sterically hindered silane or silane containing group; and
- b) at least one thermoplastic fluoropolymer having an organosilane moiety, wherein a) and b) are different.

Claim 16 (previously presented): A method of preparing a cross-linkable fluoropolymer dispersion comprising polymerizing at least one polymerizable acrylic and/or vinyl containing monomer and at least one sterically hindered silane monomer in the presence of an aqueous dispersion of at least one fluoropolymer.

Claim 17 (previously presented): A method of making a cross-linkable fluoropolymer dispersion comprising polymerizing at least one fluoromonomer in the presence of a sterically hindered silane monomer to form a fluoropolymer containing silane units and polymerizing at least one acrylic and/or vinyl containing monomer in the presence of the fluoropolymer dispersion.

Claim 18 (original): A paint comprising the cross-linkable fluoropolymer dispersion of

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claim 1.

Claim 19 (original): A coating formulation comprising the cross-linkable fluoropolymer dispersion of claim 1.

Claim 20 (original): A cross-linked fluoropolymer resulting from cross-linking said cross-linkable fluoropolymer dispersion of claim 1.

Claim 21 (original): The cross-linkable fluoropolymer dispersion of claim 1, further comprising at least one internal buffer.

Claim 22 (previously presented): A cross-linkable fluoropolymer blend comprising:

a) at least one acrylic resin or vinyl resin, or both,

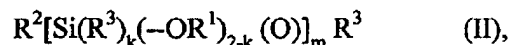
b) at least one thermoplastic fluoropolymer, wherein a) and b) are different, wherein at least one hydrolytically stable silane or silane group is polymerized in the backbone of a), b), or both, wherein said cross-linkable fluoropolymer blend is storage stable for at least three months at room temperature in an aqueous dispersion.

Claim 23 (previously presented): The cross-linkable fluoropolymer dispersion of claim 1, wherein said sterically hindered silane containing group is a sterically hindered organo-silane monomer.

Claim 24 (previously presented): The cross-linkable fluoropolymer dispersion of claim 1, wherein said sterically hindered silane containing group has the formula:



wherein n is an integer of from 0 to 2, or of the formula:



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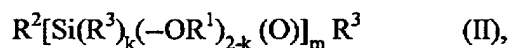
wherein m is an integer of from about 2 to about 10; k is an integer of from 0 to 1; and R¹ represents at least one C₃ or higher branched alkyl, cycloalkyl, or heterocyclic group with or without at least one fluorine substituent; R² represents at least one alkenyl or allyl, acrylate, or methacrylate containing group; R³ represents at least one n-alkyl, C₃ or higher branched alkyl, cycloalkyl, or heterocyclic group.

Claim 25 (previously presented): The cross-linkable fluoropolymer dispersion of claim 2, wherein said sterically hindered silane containing group is a sterically hindered organo-silane monomer.

Claim 26 (previously presented): The cross-linkable fluoropolymer dispersion of claim 2, wherein said sterically hindered silane or silane group has the formula:



wherein n is an integer of from 0 to 2, or of the formula:



wherein m is an integer of from about 2 to about 10; k is an integer of from 0 to 1; and R¹ represents at least one C₃ or higher branched alkyl, cycloalkyl, or heterocyclic group with or without at least one fluorine substituent; R² represents at least one alkenyl or allyl, acrylate, or methacrylate containing group; R³ represents at least one n-alkyl, C₃ or higher branched alkyl, cycloalkyl, or heterocyclic group.